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- (54) **Impregnating timber**
(57) Timber is impregnated by
depositing a liquid impregnant in a

localised part of a timber member and
encasing the member in a casing of
non-porous plastics material resistant
to the impregnating medium.

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FIG.1.

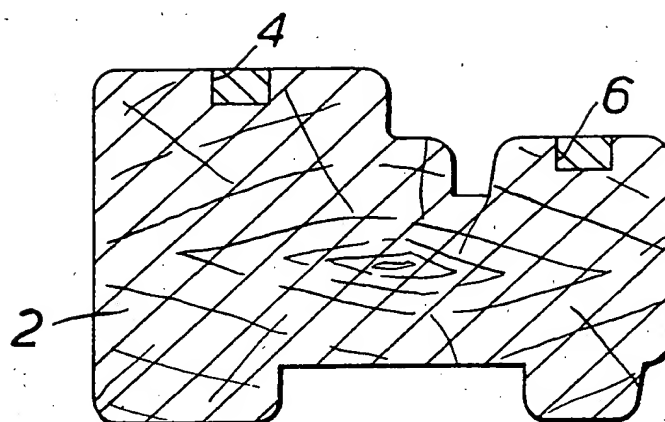


FIG.2.

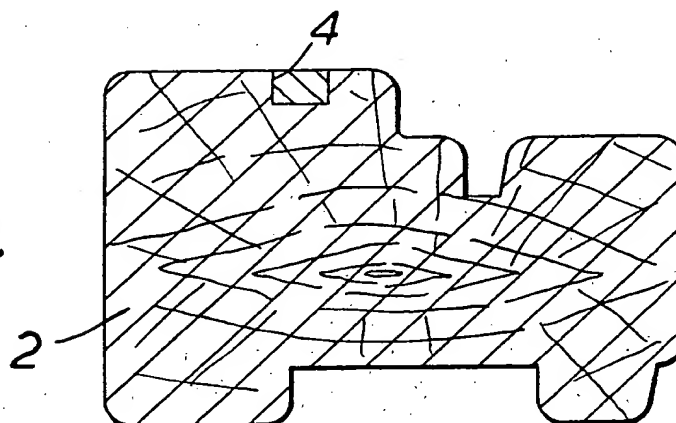
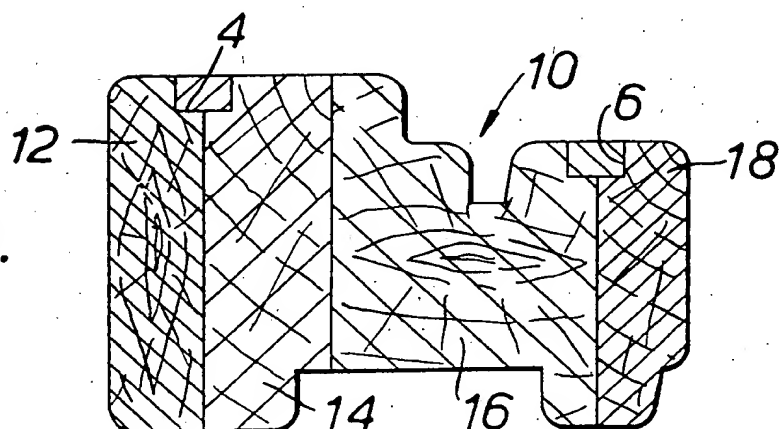
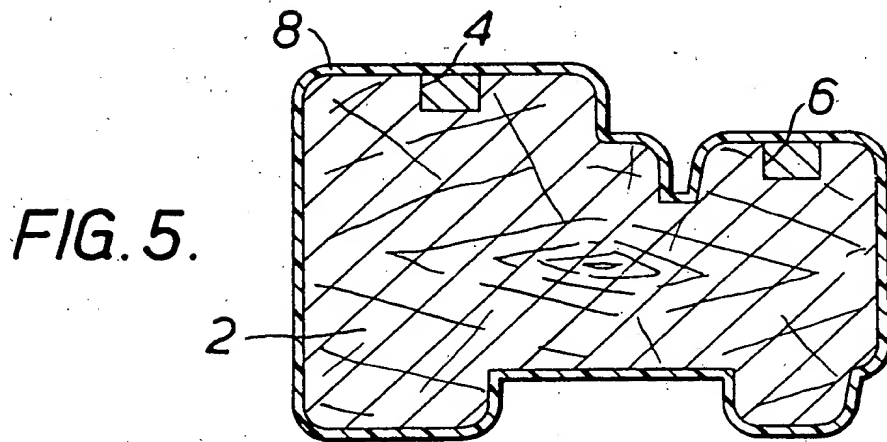
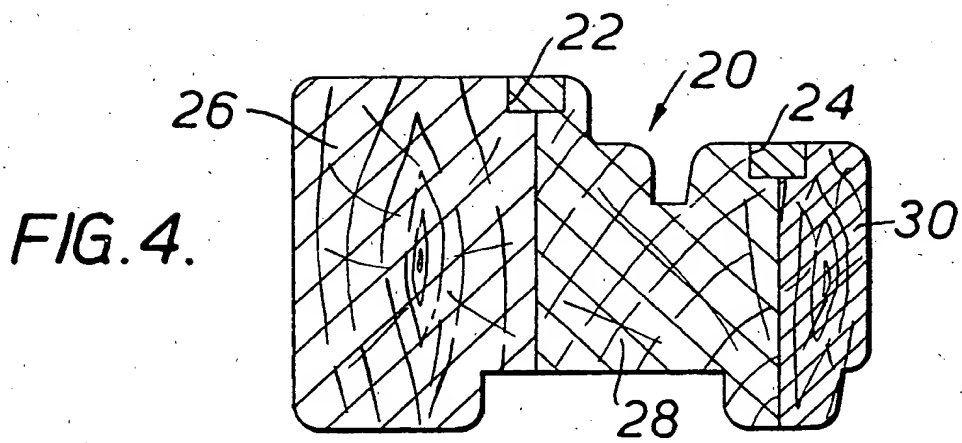


FIG.3.





SPECIFICATION

Timber impregnation

Technical Field

The present invention relates to a method of
 5 impregnating timber which is coated with a plastics material. The invention is particularly applicable to but not restricted to impregnating plastics coated softwood timber used in the construction of window frames. By suitably
 10 choosing the impregnating material it is possible to resist the effect of rot and insects on the impregnated timber.

Background Art

Previously proposed impregnation techniques
 15 using organic solvents as the impregnating medium, include:—

(1) totally immersing the timber in the impregnating medium for a period of two to three minutes at normal ambient temperatures.

20 (2) deluging the timber with the impregnating medium, and

(3) immersing the timber in an impregnating preservative medium contained in an autoclave, and subjecting the immersed timber to alternately
 25 high and reduced pressure.

In the aforementioned methods there is a degree of permanence because the impregnating chemicals are used in combination with organic solvents. In consequence the active ingredients
 30 are not readily leached out by moisture or by rain. A disadvantage of these methods is the lack of depth of penetration of the impregnating preservative into the timber, thereby resulting in incomplete and reduced protection under certain
 35 circumstances. It is technically possible to obtain almost complete penetration by using the autoclave method, but in general the length of time required to obtain complete penetration renders the method uneconomical for most
 40 applications, such as for example when preserving joinery timber.

In another previously proposed impregnating technique, the timber is treated with chemicals in aqueous solution, and the chemicals are allowed
 45 to diffuse through the timber over a prolonged period of time at normal atmospheric temperature and pressure. Disadvantages of this method are the initially high moisture content required of the timber, the required duration of the method (up to
 50 six weeks) and a tendency for the chemicals eventually to leach out under certain wet conditions. Another disadvantage is the tendency of certain of the chemicals used eventually to corrode metal fixings which may be attached
 55 when assembling the final product, such as for example a window or door.

Another previously proposed method comprises using chemicals in a water medium in an autoclave process. Although this method
 60 completely impregnates the timber, the method is not favoured for use with joinery timber because it hardens the timber and makes it brittle and more difficult to machine.

Statement of Invention and Advantages

65 The aforementioned disadvantages of the previously proposed impregnation techniques also apply to impregnating timber components coated with a plastics material. It is an aim of the invention to alleviate these aforementioned
 70 disadvantages, and accordingly there is provided a method of impregnating timber; said method comprising depositing a liquid bearing impregnating medium containing a chemical preservative in a localised part of a timber
 75 member, and encasing the timber member in a casing of non-porous plastics material resistant to the impregnating medium. At normal atmospheric temperatures, after the timber member has been encased in the plastics material the timber
 80 member becomes totally impregnated with the impregnating medium within a few days or more according to the thickness of the timber member. A particular advantage of the method of this invention is the fact that the limited time required
 85 to achieve total impregnation takes place within the normal duration of the manufacturing, transportation and storage process of the timber member after it has been encased in the plastics material.

90 The aforementioned plastics coated timber members are particularly suitable for use in the manufacture of window frames and allied products where previously it has been difficult or costly to achieve a satisfactory total preservative
 95 impregnation of the timber member.

Figures in the Drawings

Embodiments of the invention will now be described by way of example with reference to the accompanying illustrative drawings in which:—

100 FIGURE 1 is a cross section of one impregnated timber member of the invention,

FIGURE 2 is a cross section of another impregnated timber member of the invention,

105 FIGURE 3 and FIGURE 4 are cross sections of laminated timber members of the invention, and

FIGURE 5 is a cross section of the timber member of Figure 1 encased in a plastics casing.

Detailed Description of Drawings

Referring to Figure 1, an elongate softwood
 110 timber member 2 has two spaced longitudinal grooves 4 and 6 extending along its length.

Referring to Figure 5, the timber member 2 is encased in an extruded casing 8 of plastics material. A suitable plastics material is an
 115 unplasticised polyvinyl chloride or modified polyvinyl chloride.

Figure 2 illustrates a cross-section of a softwood timber member 2 having the same cross-section as the member 2 of Figure 1. The
 120 member 2 of Figure 2 has only a single longitudinal groove 4 extending along its length.

Figure 3 illustrates a cross-section of a laminated softwood timber member 10 made up of four separate timber pieces 12, 14, 16 and 18.
 125 This timber member 10 has therein the same longitudinal grooves 4 and 6 as the

aforementioned timber members 2 of Figures 1 and 2. However in the case of the timber member 10, the four timber pieces 12 to 18 are glued together so that a part of one of the grooves 4 and 5 6 is located in each timber piece.

Figure 4 illustrates a cross-section of a laminated softwood timber member 20 having two spaced longitudinal grooves 22 and 24 extending along its length. The timber member 20 10 is made up of three separate timber pieces 26, 28 and 30, which are glued together so that a part of one of the grooves 22 and 24 extends into each of the three pieces 26 to 30.

A suitable liquid bearing impregnating medium 15 which may be in viscous liquid or paste form, is located in each one of the grooves 4, 6, 22 and 24, and the timber members 2, 10 and 20 are encased in a casing of suitable plastics material as illustrated in Figure 5.

20 Suitable solvents, constituting the liquid part of the liquid bearing impregnating medium, are aliphatic hydrocarbons, isoparaffin or ethylene glycol. Standard gelling agents, such as hydrogenated castor oil or a bentonite may be 25 used if the liquid bearing impregnating medium is to be used in paste form.

The size of the grooves 4, 6, 22 and 24 is determined by experiment to provide a sufficient volume of preservative to fully saturate the timber 30 member when impregnation is complete.

An example of a suitable chemical preservative is tributyltin oxide.

CLAIMS

35 1. A method of impregnating timber comprising depositing a liquid bearing impregnating medium containing a chemical preservative in a localised part of a timber member, and encasing the timber

member in a casing of non-porous plastics material resistant to the impregnating medium.

40 2. A method as claimed in Claim 1, including forming a longitudinal groove extending along the length of an elongate timber member, and depositing the impregnating medium in the groove.

45 3. A method as claimed in Claim 2, including forming a plurality of transversely spaced longitudinal grooves to extend along the length of an elongate timber member, and depositing the impregnating medium in each groove.

50 4. A method as claimed in Claim 2 or Claim 3, including forming the timber member by securing together a plurality of separate timber pieces which are shaped and arranged so that part of a groove is located in each timber piece.

55 5. An encased impregnated timber constructed by the method of any preceding Claim.

6. A timber as claimed in Claim 5, in which the impregnating medium is in viscous liquid or paste form.

60 7. A timber as claimed in Claim 6, in which the impregnating medium is in paste form, and includes a gelling agent.

8. A timber as claimed in Claim 7, in which the gelling agent is selected from hydrogenated castor 65 oil or a bentonite.

9. A timber as claimed in any one of Claims 5 to 8, in which the liquid part of the impregnating medium is selected from aliphatic hydrocarbons, isoparaffin or ethylene glycol.

70 10. A method of impregnating timber substantially as herein described with reference to the accompanying drawings.

11. An encased impregnated timber 75 substantially as herein described and shown in the accompanying drawings.